

**A MITE, ALLOTHROMBIUM MITCHELLI, NEW TO SCIENCE,
PREDATOR ON THE BALSAM WOOLLY APHID¹**

(ACARINA: TROMBIDIIDAE)

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The balsam woolly aphid, *Chermes piceae* Ratz., was probably introduced into this country from Europe around the turn of the century. In 1908 it was found damaging fir forests in Maine. Since then it has spread throughout the northeast and into the Pacific northwest attacking all true firs, *Abies* spp.

In 1956 the balsam woolly aphid was first collected from Fraser fir at Skyland, Virginia, where it was causing top dieback and some tree mortality. In 1957, it was collected on Fraser fir from Mt. Mitchell, North Carolina. Surveys by the U. S. Forest Service personnel showed that in 1958 over eleven thousand fir were dead and over twenty-one thousand additional fir died in 1959, (Nagel, 1959).

In May of 1959 in the red spruce-Fraser fir stands of Mt. Mitchell, an unusually large population of Trombidiid mites was found by Mr. Gene D. Amman and myself. It was observed that these mites were predaceous on all stages of the balsam woolly aphid and specimens of the mite were submitted to the U. S. National Museum for determination. A determination of *Allothrombium* sp. was made by Dr. E. W. Baker.

This species of *Allothrombium* is described here as new since a search of the literature has revealed that it is not possible to associate this mite with any described species.

***Allothrombium mitchelli*, new species**

Female.—Idiosoma 4650 μ long to anterior tip of scutum, 2400 μ wide at widest part (Fig. A.) Scutum (Fig. B.) widest just anterior to the insertion of the sensillae. The ratio of length to width of scutum is 850 μ /1190 μ . The anterolateral lobes of the scutum extend 15 μ anterior to the scutum proper and posteriorly to the point of insertion of the sensillae. Each lobe is well developed and bears from 100-120 setae, most of which are concentrated on the posterior half of the lobes. Scutum proper gradually widening posteriorly to a point lateral to the sensillae insertions, then widens abruptly to its greatest width at a point lateral of the sensilligera posterior to the sensillae insertions, then rounded to the posterior of the sensilligera. Posteriorly the scutum is reduced to the size of the crista metopica where the latter is superimposed on the scutum. The crista metopica is small, widest at point of attachment to sensilligera, one third longer than wide, and lacks setae. Setae of scutum (Fig. D.) long, except immediately anteriorly and laterally to sensillae insertions where they are only slightly more than one third the length of the other setae, peripectinate and borne on subconical papil-

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lae. This variance in setal length gives the unmounted specimens a tufted appearance on the anterior portion of the idiosoma. Ocular plates and eyes are present. Anterior margin of hysterosoma projecting slightly beyond the posterior margin of the propodosoma so that the posterior portion of the scutum containing the metopica crista and the posterior sensilligera are hidden in dorsal view in unmounted specimens. Anterior dorsal setae of hysterosoma slenderer and less heavily barbed than remaining body setae. Setae of hysterosoma are heavily barbed, peripectinate and situated on subconical papillae (Fig. C.). Sensillae (Fig. E.) very long, slender, only slightly barbed and peripectinate their entire length.

Setae of coxae and legs similar (Fig. D.), long, slender, peripectinate, and less heavily barbed than hysterosomal setae, borne on subconical papillae. Setae becoming progressively shorter and less heavily barbed toward distal end of legs. Claws of all legs normal, smaller on leg I, pulvilli split, each with a ventral row of dendritic fringe. The relative length of legs I-IV are illustrated in Fig. G.

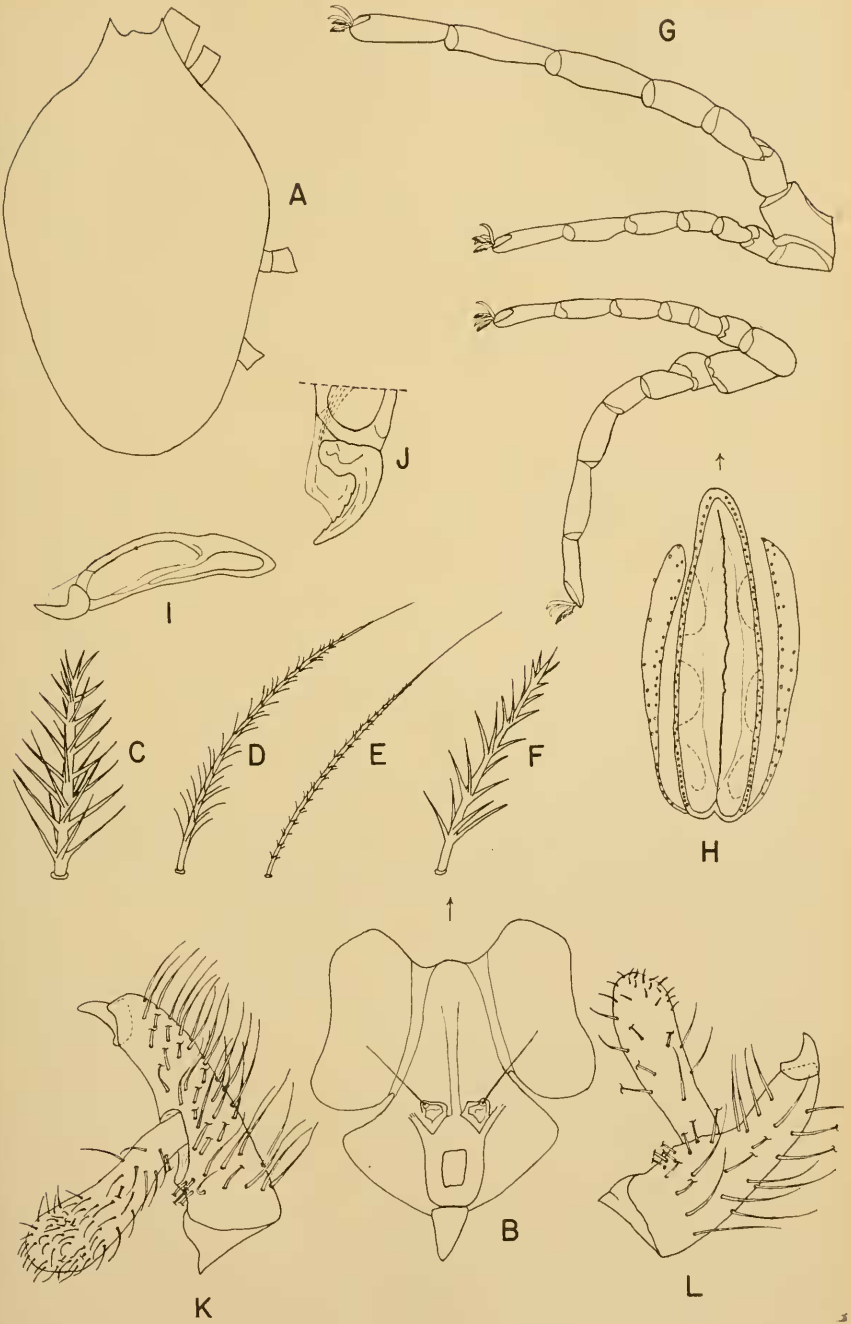
Genital and paragenital sclerites well developed (Fig. H.); genital sclerites each with 45 to 60 peripectinate setae. The insertion of the setae are indicated in Fig. H. Anterior setae of the genital sclerite long, gradually shortening posteriorly for two-thirds the length of the sclerite then abruptly becoming very long on the remainder of the sclerite. The paragenitals with 25-30 peripectinate setae similar to those of the anterior portion of the genital sclerite. Three pairs of genital acetabula of nearly equal size are placed well back in the genital opening. Anal sclerites present, each with 3 to 5 heavily barbed, peripectinate setae.

Base of gnathosoma with posterior ventral margin broadly concave. Base and rostrum with numerous slender, long, peripectinate setae becoming less pectinate toward distal end of rostrum. Velum relatively large and simple containing central, converging fimbriae. Twenty-two to twenty-four smooth long rostral setae encircle the velum posteriorly.

Chelicerae (Fig. I.) arched dorsally, fairly straight along the ventral margin except for the posterior one-third where the chelicera narrows and the ventral margin becomes subparallel with the dorsal. Dorsal membrane well developed and tapered slightly to its ventral margin. Tarsus of chelicerae (Fig. J.) with a row of 6-to-8 dorsal teeth, slightly diminishing in size posteriorly, on the distal two-thirds.

Trochanter of palp with many very long, slender, peripectinate setae on the posterior surface. The anterior surface has three long, slender, peripectinate setae in a row on its distiventral portion and a moderately long similar setae on the distidorsal portion. Setae of the femur and genu are long, slender, flexible, and peripectinate; longer on the ventral margins than the dorsal, and more

Allothrombium mitchelli n. sp., female. Fig. A, dorsum; fig. B, scutum (50x); fig. C, seta of hysterosoma; fig. D, seta of type found on coxa, leg and scutum; fig. E, sensillae; fig. F, setae of genital sclerite; fig. G, legs I-IV (17x); fig. H, genital opening (100x); fig. I, chelicera (50x); fig. J, cheliceral detail (100x); fig. K, anterior of tibia and tarsus of right palp (100x); fig. L, posterior of tibia and tarsus of left palpi (100x).



numerous on the posterior surface than the anterior. Palpal tibia (Fig. K, L) with long slender setae more numerous on posterior surface than anterior surface, with heavy pointed claw. Tarsus inserted midway of tibia. Tibial setae becoming smooth distal to tarsus insertion.

Male.—Unknown.

This description was based on the female holotype (dissected) and seven undissected paratypes from Mt. Mitchell, North Carolina. The specimens were collected May 15, 1959 on the bark of Fraser fir trees where they were feeding on the balsam woolly aphid, *Chermes piceae* Ratz. Collectors, Robert Davis and Gene D. Amman.

The holotype and two paratypes will be deposited in the U. S. National Museum. Five paratypes will be placed in the collection of the University of Georgia.

LITERATURE CITED

- Nagel, W. P., 1959. Status of the balsam woolly aphid in the Southeast in 1958. Southeast. Forest Exp. Sta., Asheville, N. C. Insect Survey Rpt. 59-1, 7 pp., illus., July.

IXODES BAKERI, A NEW SPECIES OF TICK FROM NYASALAND

(ACARINA: IXODIDAE)

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The new species of *Ixodes* here described was found among several lots of unidentified African ticks on loan from the Museum of Comparative Zoology, Harvard University, Cambridge, Mass. This species is named for Dr. Edward W. Baker, Acarologist in the Entomology Research Division, U.S. Department of Agriculture.

Ixodes bakeri, new species

(Figs. 1-8)

Holotype.—Female, from *Otomys* species, Nyika plateau, 7000 ft., Nyasaland. A. Loveridge *leg.* Deposited in the Museum of Compara-

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Ixodes bakeri, new species, female. Fig. 1, dorsal view of capitulum; fig. 2, spiracle; fig. 3, coxae I-IX; fig. 4, tarsus I and metatarsus I; fig. 5, tarsus IV; fig. 6, anal groove; fig. 7, ventral view of capitulum; fig. 8, scutum.